abcam

ab217985

Alexa Fluor® 488 Anti-SDF1 antibody [EPR1216]

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Conjugation	Alexa Fluor® 488
Excitation/Emission	Ex: 495nm, Em: 519nm
Storage buffer	pH: 7.4 Preservative: 0.02% Sodium azide Constituents: PBS, 30% Glycerol (glycerin, glycerine), 1% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR1216
Purification technique	Affinity purification Protein A
Concentration	0.5 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ICC/IF

Tested

Species	Human

Dilution info	1/1000
Notes	This product gave a positive signal in THP-1 cells fixed with 4% formaldehyde (10 min)

Flow Cyt (Intra)

Expected

Species	Human
Dilution info	Use at an assay dependent concentration.
Notes	-

Target data

See full target information CXCL12

Function

Chemoattractant active on T-lymphocytes and monocytes but not neutrophils (PubMed:18802065, PubMed:39093700). Activates the C-X-C chemokine receptor CXCR4 to induce a rapid and transient rise in the level of intracellular calcium ions and chemotaxis (PubMed:8752281, PubMed:18802065, PubMed:39093700). Also binds to atypical chemokine receptor ACKR3, which activates the beta-arrestin pathway and acts as a scavenger receptor for CXCL12/SDF-1 (PubMed:16107333, PubMed:19255243). Binds to the allosteric site (site 2) of integrins and activates integrins ITGAV:ITGB3, ITGA4:ITGB1 and ITGA5:ITGB1 in a CXCR4-independent manner (PubMed:29301984). Acts as a positive regulator of monocyte migration and a negative regulator of monocyte adhesion via the LYN kinase (PubMed:18802065). Stimulates migration of monocytes and T-lymphocytes through its receptors, CXCR4 and ACKR3, and decreases monocyte adherence to surfaces coated with ICAM-1, a ligand for beta-2 integrins (PubMed:16107333, PubMed:18802065, PubMed:19255243, PubMed:39093700). CXCR4 signaling axis inhibits beta-2 integrin LFA-1 mediated adhesion of monocytes to ICAM-1 through LYN kinase (PubMed:18802065). Inhibits CXCR4-mediated infection by T-cell line-adapted HIV-1 (PubMed:8752281). Plays a protective role after myocardial infarction. Induces down-regulation and internalization of ACKR3 expressed in various cells. Has several critical functions during embryonic development; required for B-cell lymphopoiesis, myelopoiesis in bone marrow and heart ventricular septum formation (By similarity). Stimulates the proliferation of bone marrow-derived B-cell progenitors in the presence of IL7 as well as growth of stromal cell-dependent pre-B-cells (By similarity). SDF-1-beta(3-72). Shows a reduced chemotactic activity. SDF-1-alpha(3-67). Shows a reduced chemotactic activity (PubMed:14525775). Binding to cell surface proteoglycans seems to inhibit formation of SDF-1-alpha(3-67) and thus to preserve activity on local sites (PubMed:14525775).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle, Store in the dark

Notes

Patented technology
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal antibody?
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

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Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	The stromal cell-derived factor 1 (SDF1) also known as C-X-C motif chemokine 12 (CXCL12) is a chemokine protein that is important in immunological responses and cellular signaling. This protein weighs approximately 8 kDa. SDF1 is largely expressed in bone marrow stroma liver and endothelium of various tissues positioning it as an integral player in cell migration and homing processes. The protein functions as a chemoattractant for lymphocytes promoting cellular trafficking and organ development.
Biological function summary	SDF1 influences the migration and survival of hematopoietic progenitor cells. It plays a pivotal role in heart development angiogenesis and neuronal protein regulation. SDF1 binds with high affinity to its receptor CXCR4 forming a critical signal transduction complex that modulates cellular movement and growth responses. This interaction is important in the regulation of cell positioning and potential pathways of pathological changes.
Pathways	SDF1 has an important role in the chemokine signaling pathway and is involved in the pathways controlling hematopoietic stem cell migration and homing. The interaction between SDF1 and CXCR4 triggers downstream signaling events engaging proteins like PI3K and MAPK which promote cell survival and proliferation. Furthermore the SDF1/CXCR4 axis is central to the vascular endothelial growth factor (VEGF) pathway facilitating angiogenesis and tissue repair mechanisms.
Associated diseases and disorders	SDF1 relates closely to cancer metastasis and HIV infection. The SDF1/CXCR4 interaction acts as a co-receptor for HIV entry into host cells implicating it in viral pathogenesis. Overexpression of SDF1 and its binding partner CXCR4 contributes to tumor growth invasion and metastasis in various cancers by promoting angiogenesis and tumor cell migration. The targeting of the SDF1/CXCR4 axis holds therapeutic potential in cancer treatment and infectious disease management.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

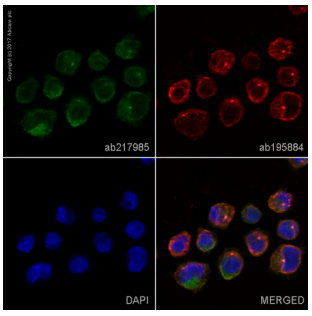
We do not recommend this combination. It is not covered by our product promise.

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In the unlikely event of one of our products not working as expected, you are covered by our product promise.

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1 product image



Immunocytochemistry/ Immunofluorescence - Alexa Fluor® 488 Anti-SDF1 antibody [EPR1216] (ab217985)

SDF1 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-SDF1 antibody

ab217985 staining SDF1 in THP-1 cells. The cells were fixed with 4% formaldehyde (10 min) and then incubated in 1% BSA/10% normal goat serum/0.3M glycine in 0.1% PBS-Tween for 1h to permeabilize the cells and block non-specific protein-protein interactions. The cells were then incubated overnight at +4°C with ab217985 at 1/1000 dilution (shown in green) and ab195884, Rat monoclonal to Tubulin (Alexa Fluor® 647), at 1/250 dilution (shown in red). Nuclear DNA was labelled with DAPI (shown in blue).
Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).

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